

## PROJECT DESCRIPTION

## I. GENERAL:

THIS PROJECT INVOLVES CONVERTING THE EXISTING PEDESTRIAN SIGNALS TO COUNTDOWN PEDESTRIAN SIGNAL HEADS AND AUDIBLE PEDESTRIAN PUSHBUTTON SYSTEMS FOR THE SOUTH, EAST, AND WEST LEGS OF THE INTERSECTION. UPDATING TRAFFIC SIGNAL HEADS AND DETECTION, RECONSTRUCTING PEDESTRIAN RAMP, FOR THE EXISTING TRAFFIC SIGNAL AT MD 320 (PINEY BRANCH AVENUE) AND RAY DRIVE/TAKOMA PARK MIDDLE SCHOOL IN TAKOMA PARK, MONTGOMERY COUNTY.

MD 320 IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.

THE PROJECT ALSO INCLUDES REMOVING THE OVERHEAD HIB EQUIPMENT ON NORTHBOUND MD 320 AND REPLACING IT WITH NEW PEDESTAL POLE-MOUNTED EQUIPMENT. THE EXISTING HIB EQUIPMENT ON SOUTHBOUND MD 320 IS TO BE UPGRADED TO LED SIGNAL HEADS.

## II. INTERSECTION OPERATION:

THE INTERSECTION OPERATES IN NEMA FIVE PHASES, FULL TRAFFIC ACTUATED MODE. THE MD 320 (PINEY BRANCH AVENUE) APPROACHES SHALL OPERATE CONCURRENTLY WITH A EAST AND WEST LEG PEDESTRIAN MOVEMENTS. SOUTHBOUND APPROACH OF MD 320 LEFT TURN PHASES SHALL BE EXCLUSIVE/PERMISSIVE PHASE. THE RAY DRIVE/ TAKOMA PARK MIDDLE SCHOOL DRIVEWAY APPROACHES SHALL ALSO CONTINUE TO RUN CONCURRENT WITH A SOUTH LEG PEDESTRIAN MOVEMENT. AUDIBLE PEDESTRIAN PUSHBUTTON WITH COUNTDOWN PEDESTRIAN SIGNAL ARE PROVIDED FOR SOUTH, EAST AND WEST LEGS OF THE INTERSECTION.

THE EXISTING FULL TRAFFIC ACTUATED EIGHT PHASE TRAFFIC SIGNAL CONTROLLER HOUSED IN A NEMA SIZE "6" BASE MOUNTED CABINET WILL BE UTILIZED.

## III. SPECIAL NOTES:

## 1. APS WILL FUNCTION AS FOLLOWS:

- TO CROSS MD 320 (PINEY BRANCH AVENUE)
- A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT WILL BE "WAIT TO CROSS PINEY BRANCH AT RAY AND TAKOMA PARK MIDDLE SCHOOL"
- B. WHEN WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.
- TO CROSS RAY DRIVE
- A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT WILL BE "WAIT TO CROSS RAY AT PINEY BRANCH."
- B. WHEN WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.
- TO CROSS TAKOMA PARK MIDDLE SCHOOL
- A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT WILL BE "WAIT TO CROSS TAKOMA PARK MIDDLE SCHOOL AT PINEY BRANCH."
- B. WHEN WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.
2. THE CONTRACTOR SHALL PURCHASE AND DELIVER THE "APS" CENTRAL CONTROL UNIT FOR THE CONTROLLER TO THE SHA SIGNAL SHOP AT 7491 CONNELLEY DRIVE, HANOVER, MARYLAND, 21076. MR. EDWARD RODENHIZER AT 410 787-7652 SHALL BE CONTACTED AT LEAST THREE DAYS PRIOR TO DELIVERY.

## PROJECT CONTACTS

THE CONTACT PERSONS FOR THE SHA ARE AS FOLLOWS:

MR. JEFFERY WENTZ  
ASSISTANT DIVISION ENGINEER  
TRAFFIC  
PHONE: 310-513-7358

WAYNE MOWDY  
ASSISTANT DISTRICT ENGINEER  
MAINTENANCE  
PHONE: 310-513-7304

AUGIE REBISH  
DISTRICT UTILITIES ENGINEER  
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KEVIN NOWAK  
DISTRICT CONSTRUCTION ENGINEER  
PHONE: 310-513-7385

EUGENE BAILEY  
TEAM LEADER  
SIGN OPERATIONS  
PHONE: 410-787-7676

ROBERT SNYDER  
ASSISTANT DIVISION CHIEF  
TRAFFIC OPERATIONS DIVISION  
PHONE: 410-787-7631

EDWARD RODENHIZER  
CHIEF, SIGNAL OPERATIONS SECTION  
PHONE: 410-787-7652

## EQUIPMENT LIST "A"

A. EQUIPMENT TO BE SUPPLIED BY SHA AND INSTALLED BY THE CONTRACTOR.

ITEM NO.	QUANTITY	DESCRIPTION
9570	14 X SF	SHEET ALUMINIUM GROUND MOUNTED SIGNS 1 EA OM-1(1) OBJECT MARKER (18"x 18") 1 EA S1-1 (36"x 36") 1 EA S4-4(3) (36"x 12")
9571	6 SF	SHEET ALUMINIUM MAST ARM/POLE MOUNTED SIGNS 2 EA R10-3(1) COUNTDOWN PEDESTRIAN PUSHBUTTON SIGN "TO CROSS PINEY BRANCH AVENUE" (9"x 15") 4 EA R10-3(1) COUNTDOWN PEDESTRIAN PUSHBUTTON SIGN "TO CROSS RAY DRIVE" (9"x 15")

## EQUIPMENT LIST "B"

B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR

ITEM NO.	QUANTITY	DESCRIPTION
1001	1 EA	MAINTENANCE OF TRAFFIC PER ASSIGNMENT
2002	2 CY	TEST PIT EXCAVATION
6001	40 LF	STANDARD TYPE 'A' COMBINATION CURB AND GUTTER (8" CURB AND 12" GUTTER PAN)
6002	1000 SF	5" CONCRETE SIDEWALK
8001	35 EA	12" (R,Y,G) LED SIGNAL HEAD SECTION
8010	6 EA	AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON STATION AND SIGN
8011	7 X EA	BREAKAWAY PEDESTAL POLE - ANY SIZE
8014	6 EA	LED 16" COUNTDOWN PEDESTRIAN SIGNAL HEAD
8016	1 EA	REMOVE AND DISPOSE OF EXISTING EQUIPMENT- PER ASSIGNMENT
8018	1 EA	REMOVE FOUNDATION 12" DEPTH
8026	50 LF	UP TO 4" SCHEDULE 80 RIGID PVC CONDUIT - SLOTTED
8027	335 X LF	UP TO 4" SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
8028	151 SF	DETECTABLE WARNING SURFACES
8031	14 LF	WOOD SIGN SUPPORT 4" X 4"
8033	610 LF	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
8044	3 X EA	FURNISH AND INSTALL ELECTRICAL HANDHOLE
8045	14 X SF	INSTALL GROUND MOUNTED SIGN
8046	6 SF	INSTALL OVERHEAD SIGN
8047	2 EA	VIDEO DETECTION CAMERA AND CABLE UP TO 500'
8055	660 LF	ELECTRICAL CABLE - 2 CONDUCTOR NO 14 AWG
8057	1320 X LF	ELECTRICAL CABLE - 5 CONDUCTOR NO 14 AWG
8058	670 LF	ELECTRICAL CABLE - 7 CONDUCTOR NO 14 AWG

## EQUIPMENT LIST "C"

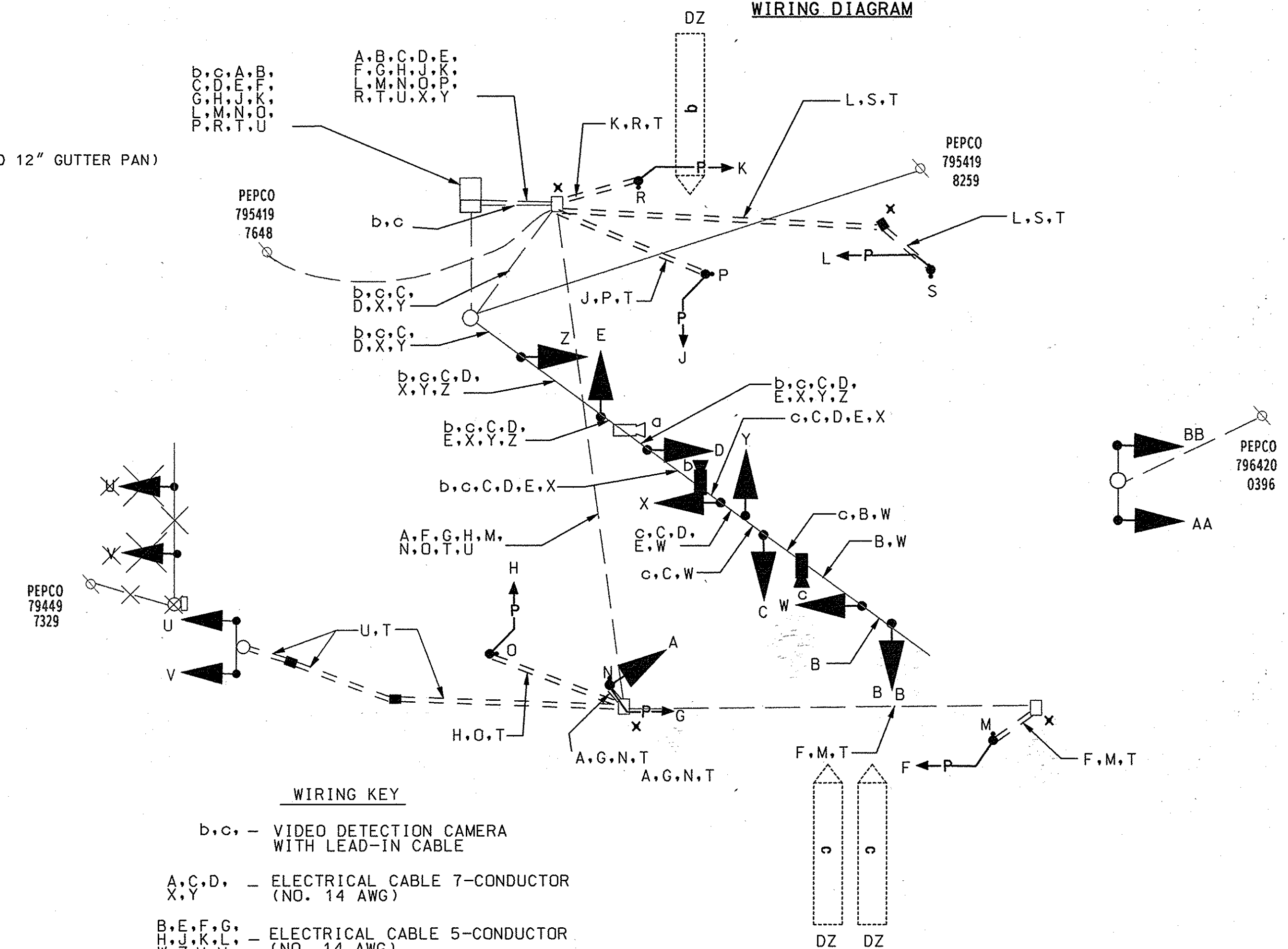
ALL EQUIPMENT AND OTHER MATERIALS TO BE REMOVED BY THE CONTRACTOR SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

## PHASE CHART

	1*	2*	3	4	5*	6*	7	8	9	10	11	12	13	14,15	16,17	18,19
	Y	Y	R	R	Y	Y	R	R	R	R	R	R	R	R	R	R
Phase 2 & 5	FL/Y	FL/Y	R	R	FL/Y	FL/Y	4G-G	4G-G	G	R	R	R	R	DW	WK	DW
5 Change	FL/Y	FL/Y	R	R	FL/Y	FL/Y	4Y-G	4Y-G	G	R	R	R	R	DW	FL/DW	DW
Phase 2 & 6	FL/Y	FL/Y	G	G	FL/Y	FL/Y	G	G	G	R	R	R	R	WK	WK	DW
Ped. Clear and Countdown	FL/Y	FL/Y	G	G	FL/Y	FL/Y	G	G	G	R	R	R	R	FL/DW	FL/DW	DW
2 & 6 Change	FL/Y	FL/Y	Y	Y	FL/Y	FL/Y	Y	Y	Y	R	R	R	R	DW	DW	DW
Phase 4 & 8	FL/Y	FL/Y	R	R	FL/Y	FL/Y	R	R	G	G	G	G	G	DW	DW	DW
4 & 8 Change	FL/Y	FL/Y	R	R	FL/Y	FL/Y	R	R	R	Y	Y	Y	Y	DW	DW	DW
4 & 8 Alt.	FL/Y	FL/Y	R	R	FL/Y	FL/Y	R	R	R	G	G	G	G	DW	DW	WK
Ped. Clear and Countdown	FL/Y	FL/Y	R	R	FL/Y	FL/Y	R	R	R	G	G	G	G	DW	DW	FL/DW
4 & 8 Alt. Change	FL/Y	FL/Y	R	R	FL/Y	FL/Y	R	R	R	Y	Y	Y	Y	DW	DW	DW
Fashing Operation	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	DARK	DARK	DARK

\*SIGNAL HEADS 1,2,5, AND 6 OPERATE SEPARATELY BY TIME OF DAY.

## WIRING DIAGRAM



## WIRING KEY

- b,c - VIDEO DETECTION CAMERA WITH LEAD-IN CABLE
- A,C,D - ELECTRICAL CABLE 7-CONDUCTOR (NO. 14 AWG)
- B,E,F,G,H,J,K,L,W,Z,U,V - ELECTRICAL CABLE 5-CONDUCTOR (NO. 14 AWG)
- M,N,O,S - ELECTRICAL CABLE 2-CONDUCTOR (NO. 14 AWG)
- T - NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
- a,x,x - EXISTING CABLE ARE NOT SHOWN RETURNING TO THE CONTROLLER
- x - PROPOSED GROUND ROD
- DZ - DETECTION ZONE

**SHA** STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION  
OFFICE OF TRAFFIC & SAFETY  
TRAFFIC ENGINEERING DESIGN DIVISION  
MD 320 (PINEY BRANCH AVENUE) AND  
RAY DRIVE/TAKOMA PARK MIDDLE SCHOOL

**CENTURY**  
ENGINEERING  
CONSULTING ENGINEERS - PLANNERS  
10710 GILROY ROAD  
HUNT VALLEY, MD 21031

## REVISIONS

1 RED LINE NO. 1  
SHEET REPLACED  
JULY 23, 2008

## GENERAL INFORMATION SHEET

SCALE NONE DATE 6/5/2008 CONTRACT NO. XX4495185

DESIGNED BY ENB MONTGOMERY

DRAWN BY ENB LOGMILE 15032000.56

CHECKED BY T.I.M.S. NO. J 041

F.A.P. NO. TOD NO.

DRAWING NO. TS-2374C-G1

SHEET NO. 2 OF 2

REVISION C

25003.94

PLOTTED: TUESDAY, JULY 23, 2008 AT 02:18 PM  
FILE: J:\DATA\041\REDLINE\PS-P002\MD320RAY DR.DGN